IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An atomic layer deposition system comprising:

a process chamber;

a substrate holder provided within said process chamber, and configured to support a substrate;

an oscillator coupled to said substrate holder, said oscillator producing an RF signal at a first power level that ignites a plasma;

an amplifier coupled to the oscillator and configured to periodically increase said first power level to a second power level in order to improve conformal coating of high aspect ratio features in the substrate;

a gas injection system including a first gas supply that supplies a first precursor through a mass flow controller to the process chamber, the first precursor selected from the group consisting of WF_6, $W(CO)_6$, $TaCl_5$, PDEAT (pentakis(diethylamido) tantalum), PEMAT (pentakis(ethylmethylamido) tantaluum), $TaBr_5$, TBTDET (t-butylimino tris(diethylamino) tantalum), molybdenum hexafluoride, Cu(TMVS)(hfac), (Trimethylvinylsilyl) hexafluoroacetylacetonato Copper I, CuCl, $Zr(NO_3)_4$, $ZrCl_4$, $Hf(NO_3)_4$, $HfCl_4$, niobium pentachloride, zinc dichloride, $Si(NO_3)_4$, $SiCl_4$, dichlorosilane, $Ti(NO_3)$, $TiCl_4$, TiI_4, tetrakis(diethylamino)titanium, tetrakis(dimethylamino)titanium, aluminum trichloride, trimethylaluminum, gallium nitrate, trimethylgallium, and Cr oxo-nitrate, and a second gas supply that supplies a second precursor through a pulsed injection manifold to the process chamber, the second precursor including at least one of H_2, N_2, O_2, H_2O, NH_3, or H_2O_2 ~~configured to supply a first precursor and a second precursor to said process chamber~~; and

a controller configured to control said mass flow controller ~~gas injection system~~ to continuously flow said first precursor to said process chamber and to control said pulsed injection manifold to pulse said second precursor to said process chamber at a first time such that the second precursor reacts with the first precursor to deposit a monolayer on the substrate, said controller being configured to pulse RF power from said oscillator to said substrate holder to said second power level at a second time in order to improve conformal coating of the monolayer on high aspect ratio features in the substrate ~~sequentially deposit at least one monolayer on said substrate~~.

Claim 2 (Original): The system of claim 1, wherein a gas injection plate of said gas injection system is substantially parallel to a substrate receiving surface of said substrate holder, and wherein said gas injection plate is configured to introduce at least one of said first gas flow and said second gas flow into said process chamber in a direction substantially normal to said substrate receiving surface of said substrate holder.

Claim 3 (Original): The system of claim 1, wherein said controller is configured to provide a pulse width of said second gas flow that is substantially equivalent to a pulse width of said RF power pulse.

Claim 4 (Original): The system of claim 1, wherein said controller is configured to provide a pulse period of said second gas flow that is substantially equivalent to a pulse period of said RF power pulse.

Claim 5 (Original): The system of claim 1, wherein said controller is configured to provide a pulse duty cycle of said second gas flow that is substantially equivalent to a pulse duty cycle of said RF power pulse.

Claim 6 (Original): The system of claim 1, wherein said controller is configured to provide that said first time of said pulse of second gas flow substantially corresponds to said second time of said pulse of RF power.

Claim 7 (Original): The system of claim 1, wherein said controller is configured to provide that said first time of said pulse of second gas flow is offset from said second time of said pulse of RF power.

Claim 8 (Original): The system of claim 1, wherein said controller is configured to adjust a background pressure in said process chamber.

Claims 9-10 (Canceled).

Claim 11 (Currently Amended): The system of claim [[10]]1, wherein said amplifier is a linear amplifier.

Claim 12 (Currently Amended): The system of claim [[10]]1, further comprising an impedance match network connecting said amplifier to said substrate holder.

Claim 13 (Original): The system of claim 12, wherein said controller is connected to and configured to control said amplifier and said impedance match network.

Claim 14 (Currently Amended): The system of claim 1 [[10]], further comprising a waveform generator configured to produce an input signal and coupled to said amplifier, wherein said RF signal is received by said amplifier and wherein said RF signal is subjected to amplitude modulation via said input signal received by said amplifier from said waveform generator.

Claim 15 (Original): The system of claim 14, wherein said input signal is a pulse waveform.

Claim 16 (Original): The system of claim 14, wherein said controller is connected to and configured to control said waveform generator.

Claim 17 (Canceled)

Claim 18 (Currently Amended): The system of claim 1[[17]], wherein said pulsed gas injection manifold comprises a pressure regulator, a pulsed gas injection valve, and a gas distribution manifold.

Claim 19 (Currently Amended): The system of claim 1[[17]], said controller being connected to and configured to control said first gas supply, said mass flow controller, said second gas supply, and said pulsed gas injection manifold.

Claims 20-21 (Canceled).

Claim 22 (Original): The system of claim 1, wherein said first precursor further includes a carrier gas.

Claim 23 (Original): The system of claim 22, wherein said carrier gas includes a Noble gas.

Claim 24 (Original): The system of claim 1, wherein said second precursor further includes a carrier gas.

Claim 25 (Original): The system of claim 24, wherein said carrier gas includes a Noble gas.

Claim 26 (Currently Amended): A method of operating a plasma processing system in order to deposit a film on a substrate using atomic layer deposition (ALD), the method comprising the steps of:

adjusting a background pressure in a process chamber, wherein the background pressure is established by continuously flowing a first gas flow of a first precursor into the process chamber, the first precursor selected from the group consisting of WF_6, $W(CO)_6$, $TaCl_5$, PDEAT (pentakis(diethylamido) tantalum), PEMAT (pentakis(ethylmethylamido) tantaluum), $TaBr_5$, TBTDET (t-butylimino tris(diethylamino) tantalum), molybdenum hexafluoride, Cu(TMVS)(hfac), (Trimethylvinylsilyl) hexafluoroacetylacetonato Copper I, CuCl, $Zr(NO_3)_4$, $ZrCl_4$, $Hf(NO_3)_4$, $HfCl_4$, niobium pentachloride, zinc dichloride, $Si(NO_3)_4$, $SiCl_4$, dichlorosilane, $Ti(NO_3)$, $TiCl_4$, TiI_4, tetrakis(diethylamino)titanium, tetrakis(dimethylamino)titanium, aluminum trichloride, trimethylaluminum, gallium nitrate, trimethylgallium, and Cr oxo-nitrate ~~using a gas injection system~~;

igniting a processing plasma in the process chamber by providing an RF signal at a first power level;

pulsing a second gas flow of a second precursor through a pulsed injection manifold to the process chamber ~~using the gas injection system~~ at a first time, the second gas comprising a second precursor including at least one of H_2, N_2, O_2, H_2O, NH_3, or H_2O_2;

pulsing a RF power to a substrate holder by amplifying said first power level at a second time, to a second power level in order to improve conformal coating of high aspect ratio features of the substrate ~~said RF power being pulsed from an oscillator coupled to the substrate holder~~; and

sequentially depositing at least one monolayer of said film using said first gas ~~precursor~~ and said second gas, while periodically amplifying to said second power level in order to improve conformal coating of the monolayer on high aspect ratio features in the substrate ~~precursor~~.

Claim 27 (Original): The method according to claim 26, wherein the step of pulsing the second gas flow is performed for a predetermined pulse width.

Claim 28 (Original): The method according to claim 26, wherein the step of pulsing the second gas flow is performed for a predetermined pulse period.

Claim 29 (Original): The method according to claim 26, wherein the step of pulsing the second gas flow is performed to achieve a predetermined pulse duty cycle.

Claim 30 (Original): The method according to claim 26, wherein the step of pulsing the RF power is performed for a predetermined pulse width.

Claim 31 (Original): The method according to claim 26, wherein the step of pulsing the RF power is performed for a predetermined pulse period.

Claim 32 (Original): The method according to claim 26, wherein the step of pulsing the RF power is performed to achieve a predetermined pulse duty cycle.

Claim 33 (Original): The method according to claim 26, wherein the step of pulsing the second gas flow is performed for a first pulse width, and wherein the step of pulsing the RF power is performed for a second pulse width, said first pulse width being substantially equivalent to said second pulse width.

Claim 34 (Original): The method according to claim 26, wherein the step of pulsing the second gas flow is performed for a first pulse period, and wherein the step of pulsing the RF power is performed for a second pulse period, said first pulse period being substantially equivalent to said second pulse period.

Claim 35 (Original): The method according to claim 26, wherein the step of pulsing the second gas flow is performed to achieve a first pulse duty cycle, and wherein the step of pulsing the RF power is performed to achieve a second pulse duty cycle, said first pulse duty cycle being substantially equivalent to said second pulse duty cycle.

Claim 36 (Original): The method according to claim 26, wherein the first time of the pulse of second gas flow substantially corresponds to the second time of the pulse of RF power.

Claim 37 (Original): The method according to claim 26, wherein the first time of the pulse of second gas flow is offset from the second time of the pulse of RF power.

Claim 38 (Canceled).